# Milkweed and Pollinator Planting, Ravalli County, MT

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**Objective:** Increase forbs and milkweed for pollinators habitat
**County:** Ravalli County
**Average Annual Precipitation**: 13 - 16 inches
**MLRA:** 44A, Northern Rocky Mountain Valleys
**Dominant Soil Type:** Gash, sandy loam
**Elevation:** 3452 ft
**Site Preparation:** Site was sprayed with glyphosate prior to seeding, and weed seed production were controlled in the past with mowing
**Seeding Date:** April 25, 2019
**Seeding Method:** Drill seeded at 6.5-inch row spacing and ¾ inch depth, hand-planted rhizomes at 24 inch spacing
**Acres Seeded:** 0.1 acres
**Previous Site History:** Pasture on refuge for wildlife habitat
**Herbicide:** Glyphosate applied prior to seeding
**Irrigation:** None
**Grazing:** None, plots are within 8-foot exclosure
**Monitoring Dates:** July 2019 and 2020

**Fig 1.** Seeding glyphosate-treated site with plot drill.

**Table 1.** Seeded species and their seeding rate.

| Common Name | Scientific Name | Cultivar | lb PLS/ac | Seeds/ft |
|---|---|---|---|---|
| Bluebunch wheatgrass | *Pseudoroegneria spicata* | Goldar | 1.0 | 3.2 |
| Green needlegrass | *Nassella viridula* | Lodorm | 1.0 | 4.4 |
| Western wheatgrass | *Pascopyrum smithii* | Rosana | 1.0 | 2.1 |
| Hairy goldenaster | *Heterotheca villosa* | VNS | 0.1 | 0.7 |
| Lewis flax | *Linum lewisii* | Columbia | 0.4 | 2.6 |
| Blanketflower | *Gaillardia aristata* | VNS | 0.1 | 0.4 |
| Showy milkweed | *Asclepias speciosa* | VNS | 0.8 | 1.3 |
| Showy milkweed seed alone | *Asclepias speciosa* | VNS | 15.0 | 28 |
| Showy milkweed rhizome | *A sclepias speciosa* | rhizome | Rhizomes | 0.5 plants |

**Introduction:**

The orange and black Monarch butterfly is an astounding icon of animal migrations. It is known for its annual, multi-generation migration from Mexico to the northern United States and Canada. Monarch butterflies depend on milkweed during the journey to lay their eggs and for their caterpillars to feed. Monarch populations have decreased significantly over the past two decades, in part because of the decrease in native plants, including milkweed, that once spanned the country. Because monarch butterflies are always on the move, they need to have the right plants at the right time along their migration route. One way NRCS can support monarchs and other pollinator insects is to plant milkweed and flowering plants in conservation practices.

In spring 2019, the Teller Wildlife Refuge, Pheasants Forever, NRCS Hamilton Field Office, Montana State University Ag Experimental Station, and NRCS Plant Materials worked together to seed a milkweed and pollinator field planting near Hamilton, MT. This field planting tests planting milkweed seed alone, milkweed rhizomes alone, and a milkweed-pollinator seed mix to see how well the species establish. The

milkweed rhizome planting builds off research at the Idaho Plant Materials Center. Milkweed rhizomes (0.25 to 1 inch thick) were collected on site, cut into 3-inch lengths, and planted at 2-foot spacings.

**Fig. 2.** Rhizome planted milkweed plant emerges in glyphosate treated site, July 2019. No other seeded species emerged during summer drought conditions.

**Fig. 3.** Seeded showy milkweed plants were stressed from lack of moisture and cheatgrass competition, July 2020.

**Results:**

In 2019, the site experienced drought for the remainder of the summer. At the time of evaluation, no seeded species had emerged, and the site lacked any vegetation - even weeds. Rhizome emergence was 100% following planting but decreased to approximately 50% by July with plants averaging 3 inches tall.

In 2020, seeded western wheatgrass accounted for 5% canopy cover and bluebunch wheatgrass and green needlegrass were 1% cover each. Cheatgrass had re-established on the site with approximately 70% cover. None of the seeded forbs established except for showy milkweed. Milkweed established from seed where it was included in a mix and seeded alone. There were approximately 70, two-foot-tall milkweed plants accounting for 5% canopy cover in the seeded area. Rhizome planted milkweed plants decreased to 10% survival in 2020. All milkweed plants were drought stressed as indicated by yellow, curling foliage. Other places on the refuge where milkweed is thriving have a higher water table or irrigation.

**Fig. 4.** Pollinator visiting showy milkweed.

**Summary:**

- Showy milkweed can establish from seed or rhizome transplants.
- Showy milkweed should be seeded/planted on sites with a higher water table or supplemental water where soil moisture around the roots remains moist (not wet) throughout the summer.
- Additional cheatgrass management pre- or post-seeding may have improved seedling establishment.